

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-29 (Canceled).

30. (New) A semiconductor structure, comprising:

a weakly doped semiconductor substrate of a first or second doping type,

a highly doped drain region of a second doping type, located at a first surface of the semiconductor substrate,

a highly doped source region of the second doping type, located at the first surface of the semiconductor substrate,

a channel extending between the source region and the drain region,

a doped inner gate region of the first doping type, located in the semiconductor substrate, at least partially below the channel, and

a clear contact for the removal of charge carriers from the inner gate region,

wherein the inner gate region in the semiconductor substrate extends at least partially up to the clear contact.

31. (New) The semiconductor structure according to Claim 30, wherein the clear contact is located on a drain side relative to the source region.

32. (New) The semiconductor structure according to Claim 30, wherein the clear contact is located at least partially between the source region and the drain region.

33. (New) The semiconductor structure according to Claim 30, wherein a drain/clear region adapted for selective activation as an auxiliary clear contact or as a drain, borders to the clear contact and to the drain region or is led near to the drain region.
34. (New) The semiconductor structure according to Claim 30, wherein a source/clear region adapted for selective activation as an auxiliary clear contact or as a source, borders to the clear contact and to the source region or is led near to the source region.
35. (New) The semiconductor structure according to Claim 30, wherein, in the semiconductor substrate below the clear contact, a doped shield region of the second doping type is located which electrically shields off the clear contact.
36. (New) The semiconductor structure according to Claim 30, wherein the inner gate region in the semiconductor substrate extends from the source region up to the drain region.
37. (New) The semiconductor structure according to Claim 30, wherein the inner gate region in the semiconductor substrate is located at least partially below the drain region and the clear contact and is spaced apart from the source region.
38. (New) The semiconductor structure according to Claim 30, wherein the channel immediately borders on the clear contact.
39. (New) The semiconductor structure according to Claim 30, wherein the channel extends to the clear contact up to a pre-specified distance.

40. (New) The semiconductor structure according to Claim 30, wherein the drain region is divided up into several partial regions which are spaced apart from one another.

41. (New) The semiconductor structure according to Claim 40, wherein a first partial region of the drain region is directly contacted, while a second partial region of the drain region is contacted by way of an inversion layer below the drain/clear region.

42. (New) The semiconductor structure according to Claim 30, further comprising a first line transfer for contacting the drain region.

43. (New) The semiconductor structure according to Claim 42, further comprising a second line transfer for contacting the clear contact.

44. (New) The semiconductor structure according to Claim 30, wherein a closed and/or ring-shaped gate region controls the channel.

45. (New) The semiconductor structure according to Claim 44, wherein the clear contact is located within the gate region, while the source region is located outside of the gate region.

46. (New) The semiconductor structure according to Claim 44, wherein the drain region is located within the gate region, while the source region is located outside of the gate region.

47. (New) The semiconductor structure according to Claim 44, wherein the drain/clear region is located within the gate region, while the source region is located outside of the gate region.

48. (New) The semiconductor structure according to Claim 44, wherein the clear contact is located outside of the gate region, while the source region is located within the gate region.
49. (New) The semiconductor structure according to Claim 44, wherein the drain region is located outside of the gate region, while the source region is located within the gate region.
50. (New) The semiconductor structure according to Claim 44, wherein the drain/clear region are located outside of the gate region, while the source region is located within the gate region.
51. (New) The semiconductor structure according to Claim 44, wherein the drain/clear region adjoins an entire periphery of the gate region.
52. (New) The semiconductor structure according to Claim 44, wherein the gate region borders only with a part of a periphery on the drain/clear region and with the rest of the periphery on a doped region of the second doping type that is joined to the drain region and/or borders on the drain region.
53. (New) The semiconductor structure according to Claim 30, wherein the clear contact is divided up into several parts.
54. (New) The semiconductor structure according to Claim 30, wherein a region of the second doping type is located at a second surface of the semiconductor substrate for the purpose of depleting the semiconductor substrate.
55. (New) The semiconductor structure according to Claim 30, wherein the first doping type is n-doped, whereas the second doping type is p-doped.

56. (New) The semiconductor structure according to Claim 30, wherein the first doping type is p-doped, whereas the second doping type is n-doped.

57. (New) The semiconductor structure according to Claim 30, wherein the semiconductor substrate is silicon.

58. (New) The semiconductor structure according to Claim 30, wherein the drain/clear region is a MOS region.

59. (New) The semiconductor structure according to Claim 30, provided in a form of a depletion type semiconductor structure with additional channel implantation.

60. (New) The semiconductor structure according to Claim 30, provided in a form of an enrichment type semiconductor structure without additional channel implantation.

61. (New) The semiconductor structure according to Claim 33, wherein the drain/clear region has underneath a surface-near implantation of the second doping type.

62. (New) The semiconductor structure according to Claim 33, wherein the source/clear region has underneath a surface-near implantation of the second doping type.

63. (New) A detector with a semiconductor structure according to Claim 30.